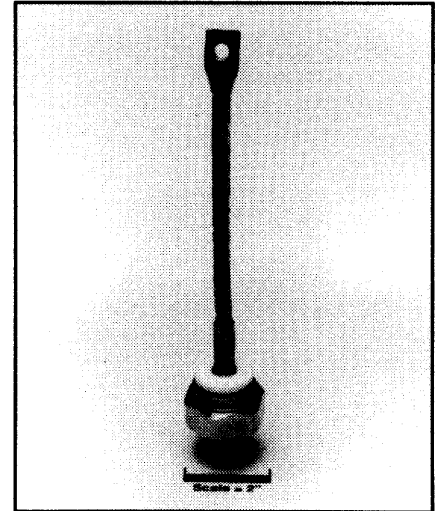
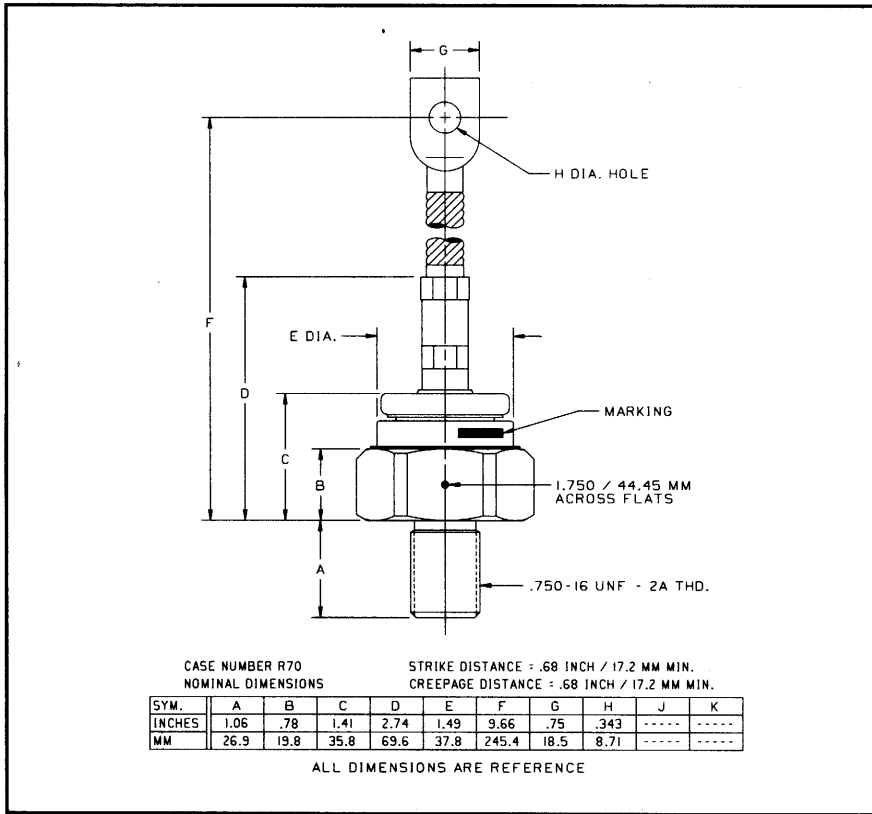


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**General Purpose Rectifier**  
 300-550 Amperes Average  
 4400 Volts



**R700/R701**  
**General Purpose Rectifier**  
 300-550 Amperes Average, 4400 Volts

R700/R701 (Outline Drawing)

**Ordering Information:**

Select the complete part number you desire from the following table:

Type	Voltage		Current		Recovery Time		Recovery Time Circuit		Leads	
	V <sub>RRM</sub> (Volts)	Code	I <sub>F(av)</sub> (A)	Code	t <sub>rr</sub> (μsec)	Code	Circuit	Code	Case	Code
R700 Std. Polarity	100	01	300	03	15	X	JEDEC	X	R70	UA
	200	02								
	400	04	450	04	11	X				
	600	06								
R701 (Rev. Polarity)	800	08	550	05	9 (Typ.)	X				
	1000	10								
	1200	12								
	1400	14								
	1600	16								
	1800	18								
	2000	20								
	2200	22								
	2400	24								
	2600	26								
2800	28									
3000	30									
3500	35									
4000	40									
4400	44									

Example: Type R700 rated at 300A average with V<sub>RRM</sub> = 4400V, and standard flexible lead, order as:

Type	Voltage	Current	Time	Circuit	Leads
R 7 0 0	4 4	0 3	X	X	U A

**Features:**

- Standard and Reverse Polarities
- Flag Lead and Stud Top Terminals Available (R780)
- Flat Base, Flange Mounted Design Available
- High Surge Current Ratings
- High Rated Blocking Voltages
- Electrical Selection for Parallel and Series Operation
- High Voltage Creepage and Strike Paths
- Compression Bonded Encapsulation

**Applications:**

- Welders
- Battery Chargers
- Electromechanical Refining
- Metal Reduction
- General Industrial High Current Rectification



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**R700/R701**  
**General Purpose Rectifier**  
 300-550 Amperes Average, 4400 Volts

**Absolute Maximum Ratings**

Characteristics	Symbol	R700_ _03,	R700_ _04,	R700_ _05,	Units
		R701_ _03	R701_ _04	R701_ _05	
RMS Forward Current	$I_{F(rms)}$	470	700	865	Amperes
Average Forward Current	$I_{F(av)}$	300	450	550	Amperes
One-half Cycle Surge Current	$I_{FSM}$	7000	8500	10000	Amperes
3 Cycle Surge Current	$I_{FSM}$	5250	6400	7500	Amperes
10 Cycle Surge Current	$I_{FSM}$	4200	5100	6000	Amperes
$I^2t$ (for Fusing), Times = 8.3 milliseconds	$I^2t$	204000	266000	416500	$A^2sec$
Storage Temperature	$T_{stg}$	-65 to +200	-65 to +200	-65 to +200	$^{\circ}C$
Operating Temperature	$T_j$	Up to 1400V	1400V to 2200V	2200V to 4400V	
		-65 to +200	-65 to +175	-65 to +150	$^{\circ}C$
Mounting Torque		360	360	360	in-lb



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**R700/R701**

**General Purpose Rectifier**

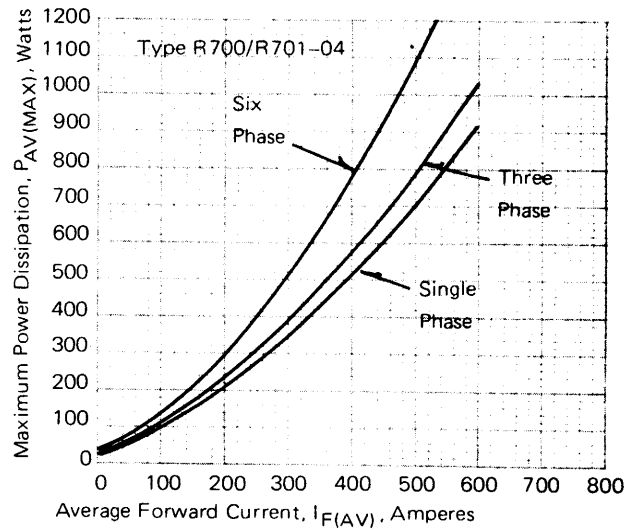
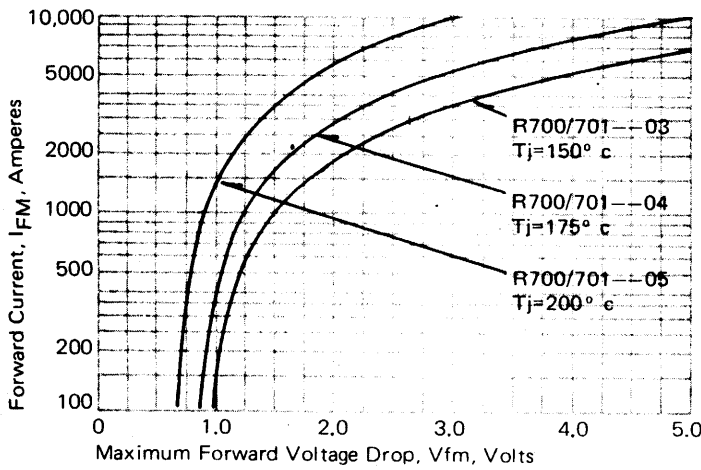
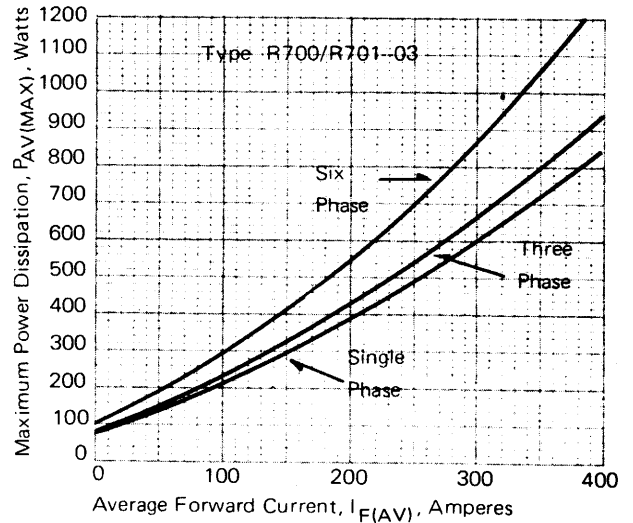
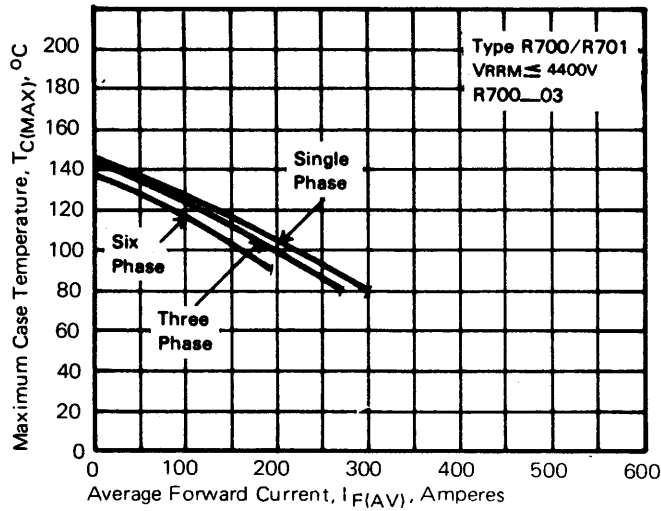
300-550 Amperes Average, 4400 Volts

**Electrical and Thermal Characteristics**

Characteristics	Symbol	Test Conditions	R700_03,	R700_04,	R700_05,	Units
			R701_03	R701_04	R701_05	
<b>Current - Conducting State Maximums</b>						
Forward Voltage Drop	$V_{FM}$	$T_j = 25^\circ\text{C}$ , $I_{FM} = 1500\text{A}$	2.15	1.60	1.20	Volts
<b>Voltage - Blocking State Maximums</b>						
Repetitive Peak Reverse Voltage (Rated Limit)	$V_{RRM}$		4400	2600	1600	Volts
Non-rep. Trans. Peak Rev. Voltage (Rated Limit)	$V_{RSM}$	$t \leq 5.0\text{msec}$	4600	2800	1800	Volts
Reverse Leakage Current	$I_{RRM}$	$T_j$ at max., $V_{RRM}$ Rated	50	50	50	mA
<b>Switching</b>						
Typical Reverse Recovery Time	$t_{rr}$	$I_{FM} = 1500\text{A}$ , $t_p = 190\mu\text{sec}$ , $di_R/dt = 25\text{A}/\mu\text{sec}$ , $T_C = 25^\circ\text{C}$	9	11	15	$\mu\text{sec}$
<b>Thermal</b>						
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$		0.12	0.12	0.12	$^\circ\text{C}/\text{Watt}$
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$		0.04	0.04	0.04	$^\circ\text{C}/\text{Watt}$

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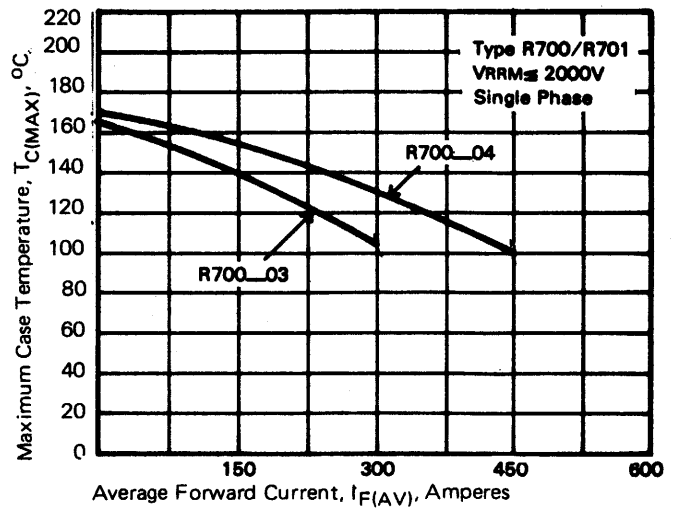
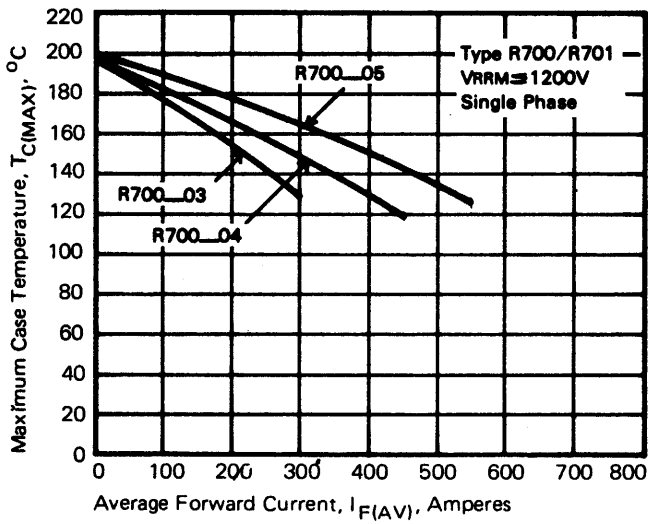
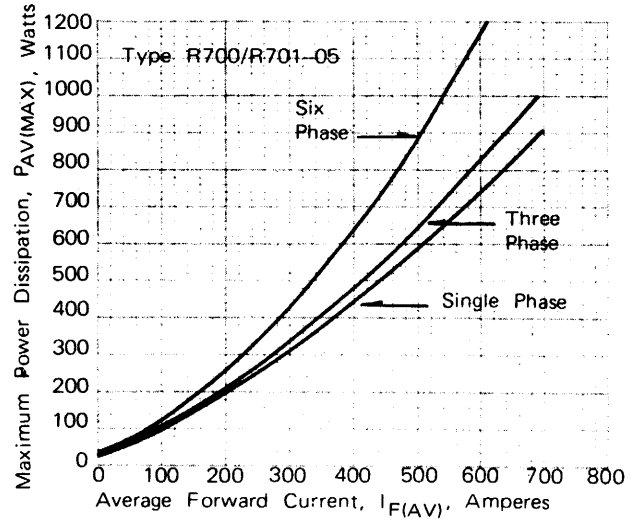
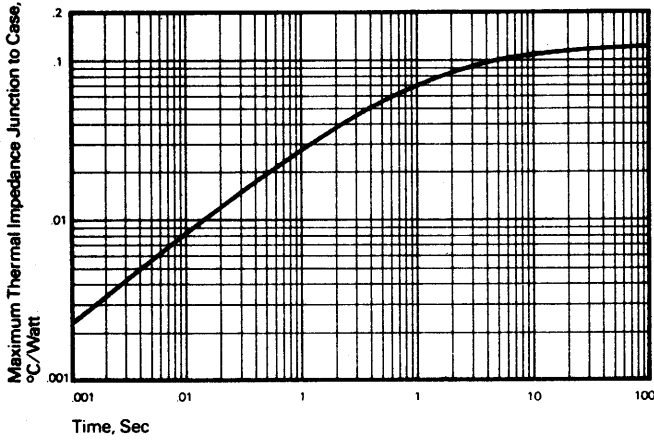


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## R700/R701

General Purpose Rectifier

300-550 Amperes Average, 4400 Volts



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**R700/R701**  
**General Purpose Rectifier**  
 300-550 Amperes Average, 4400 Volts

